

**REMARKS**

The Applicant has thoroughly considered the Examiner's remarks and has prepared this Amendment in light of the Official Action. The Applicant has submitted a Petition for Two Month Extension of Time, with the requisite fee, and the Declarations Under 37 CFR §1.132 of John Rocheleau, Gerard Gaynor, Dale Emerson, Sean McClure, John Phillips, Edward Morris, Samuel Denoncour, Andre Berube, and Walter Davis. The Declarations of all but Mr. Rocheleau are identical in substance and differ only in the identification of the experience of each declarant. Accordingly, the Declaration of Mr. Rocheleau shall hereafter be referred to as the "Rocheleau Declaration" and all of the other Declarations will be referred to as simply the "Declarations".

The Applicant has added new Claim 13, which sets forth all of the same limitations as pending claim 1, but utilizes the closed ended transition "consisting essentially of" rather than the open ended transition "comprising". Claims 1 - 13 remain pending in the Application.

The Applicant respectfully disagrees with the rejection of claims 1 – 12 and, for the reasons set forth below, requests that these rejections be reconsidered and withdrawn. The following remarks will follow the order set forth in the Official Action.

**Rejections Under 35 USC 102**

Claims 1 and 3 were rejected under 35 USC §102 as anticipated by Shaw. In making this rejection, it was asserted that Shaw discloses a threaded pipe flange comprising a base portion, a shoulder portion with six substantially flat gripping surfaces, at least two mounting bolts and a threaded opening. In response to this rejection, the Applicant amended claims 1 and 8 to include

the limitation that the shoulder portion be integral to the base portion. In both the subsequent action and the present Action, the Examiner has asserted that Applicant's inclusion of this limitation does not define over Shaw. In support of this assertion, the Examiner cited *In re Hotte* for the proposition that "the term "integral" is sufficiently broad to embrace constructions united by such means as fastening and welding". The Applicant again respectfully disagrees that the flange and base portion of Shaw are united by fastening, welding, or via other art recognized means and, as noted below, has supported this position with the attached Declarations Under 37 USC §1.132.

As noted in the Applicant's Amendment (Paper No. 6), Shaw discloses a variation of what is commonly known as a union connection. This type of connection relies on the mating of two substantially conical surfaces (Shaw specifically refers to a "tapered projection B" which is part of nut A and "corresponding recess" which is part of nut C) to achieve a leak tight seal between the two halves of the union. One means of accomplishing a leak tight seal between two conical surfaces is to urge them together with a high force. This type of connection is also commonly referred to as a compression fitting, which typically utilizes a threaded nut to draw the halves together. In Shaw, this drawing together of the halves is accomplished by a pair of "loose flanges", which act to transfer the tension forces in the tightened bolts E to the interface between the mating conical surfaces where they are born as compression forces. These flanges are separate and distinct from the two nuts that join the pipes together and, it is respectfully submitted, are not integral thereto.

The applicant's assertion is further supported by the fact that the union connection disclosed by Shaw includes a threaded connection having a ring extending therefrom that acts only as a bearing surface for engagement with the backside of a separate flange. They do not turn integrally and, in fact, the threaded connections are attached to the pipes and each other before the flanges are brought into contact with the connections when the bolts are inserted and tightened. Absent the separate flange and bolts, the flange and threaded connection would not remain in contact with one another. In fact, a single flange is never, and cannot be, attached to a single connection. Thus, as the flange and threaded connection are neither fastened, welded nor otherwise attached to one another, they cannot be integral to one another.

In further support of these assertions, the Applicant points to the Declarations. Each declarant is one of at least ordinary skill in the art and each declares "the union connection disclosed by Shaw is not a threaded pipe flange and does not have a shoulder portion that extends from, and is integral to, a base portion. Rather, the union connection of Shaw utilizes loose flanges that are joined together to compress the threaded portions once the threaded portions have been assembled to one another." "Absent the separate flange and bolts, the flange and threaded connection would not remain in contact with one another as a single flange cannot be attached to a single connection."

For the foregoing reasons, the Applicant asserts that claims 1 and 3 are not anticipated by Shaw and respectfully requests that the Examiner reconsider and withdraw these rejections.

Notwithstanding the above assertions, the Applicant likewise asserts that claims 1 and 3

are unobvious in light of Shaw. The Applicant's invention teaches, among other things, a base portion, a shoulder portion, gripping surfaces and a threaded opening wherein all of these features are integral both in form, i.e., unitary, and integral in terms of their functional cooperation. The gripping surfaces cooperate directly with the threaded opening in the shoulder portion by providing a means to use a common wrench to mate a flange with a threaded pipe end.

Conversely the Shaw invention teaches no such cooperation between gripping surfaces and a flange. The shoulder portion and the gripping surfaces are used solely and exclusively to aid in the joining of nuts A and C to threaded pipe ends and have no role in joining the flange to the threaded pipe end, this is accomplished by means of an assembly requiring through-bolts and a mating flange-nut-pipe combination. Conversely, the Shaw invention is aimed solely at accomplishing pipe-to-pipe connections and is described as having the qualities of being "readily applied and adjusted". The stated adjustability appears to rest with the ability of the flange to rotate with respect to the nut prior to the insertion of the mounting bolts. There is no inherent constraint between the "clock position" at which the nut-to-pipe thread becomes sufficiently tight and the rotational position of the flange with respect to the nut. This is advantageous as used in the Shaw invention when directed at joining two pipes that are rotationally constrained, i.e., already attached at one end. Rigidly joining the flange to the nut would degrade the utility of the Shaw invention, specifically in terms of adjustability. Therefore, there would therefore be no motivation for one of ordinary skill in the art to make the flange of the Shaw invention integral with the nut.

These assertions are likewise supported by the Declarations, in which each declarant declares that "I would not know, based upon the teachings of Shaw or my knowledge of one of at least ordinary skill in the art, to modify Shaw to obtain a flange having a base portion and integral shoulder portion as claimed in Mr. Rocheleau's patent application."

Because the Applicant's claim 1 includes a limitation that is not found in Shaw, namely a shoulder portion that is integral to the base portion, and because there is no suggestion in the art to modify the Shaw invention to include this limitation, the Applicant asserts that Shaw cannot anticipate the Applicant's claim 1. Therefore, the Applicant respectfully requests that the rejections under 35 U.S.C. §102 be reconsidered and withdrawn.

Rejections Under 35 USC 103

The Applicant again asserts that claim 8 as are not obvious in light of Shaw, either alone, or in combination with the cited art. As noted in the specification, the principal problem solved by the Applicant's invention is the problem of attaching a pipe flange adjacent to an existing circulator or other device when in close quarters. *See generally page 3, lines 4 - 6.* However, as noted in the Applicant's Paper 6, none of the cited references either discusses this problem, or makes any suggestion for modifying their existing designs to achieve this result.

The lack of motivation to modify the invention disclosed by Shaw is further shown both by the fact that Shaw issued in 1878, and by the fact that circulators and circulator flanges have been utilized for at least the past 50 years. Given the problem solved by the present invention is not a new one, if it were obvious to one of ordinary skill to modify Shaw to meet the limitations

of the present invention, why has such a modification not occurred until now? The Applicant asserts that such a modification has not been made because there is no suggestion, either in the prior art or in the knowledge of those of ordinary skill in the heating arts, to make such a modification.

These assertions are likewise supported by the Declarations, in which each declarant declares that "The problem of attaching circulator pipe flanges has been known for many years. However, I would not know, based upon the teachings of Shaw or my knowledge of one of at least ordinary skill in the art, to modify Shaw to obtain a flange having a base portion and integral shoulder portion to solve the problem of attaching a circulator pipe flange."

Finally, the non-obviousness of all of the claims is supported by a number of secondary considerations. First, as noted above, the problem of attaching circulator flanges to pipes has been known for years and the Shaw patent issued over 100 years ago. Given the knowledge of the problem, and the availability of the Shaw reference for as long as the problem has existed, the Applicant asserts that this factor weighs heavily against a finding of obviousness.

Second, as noted in the Rocheleau Declaration, the invention claimed in the present application has been licensed to Taco, Inc., of Cranston, RI. Taco is the largest manufacturer and distributor of circulators in the United States and has been manufacturing and selling flanges under this license for over eighteen months. If the invention were obvious, why would a company like Taco choose to license this patent application? The Applicant respectfully asserts that they would not and, therefore, that this licensing weighs against a finding of obviousness.

Finally, as also noted in the Rocheleau Declaration, the Inventor himself spent three years and over \$100,000 in developing tools to solve the problem solved by the present invention. This development resulted in 5 patent applications being filed and numerous prototypes being developed. Despite this intense effort upon solving the problem, it was not until this money was spent until the Inventor conceived of the present invention. The Applicant respectfully submits that these efforts also weight heavily against a finding of obviousness.

For the foregoing reasons, the Applicant asserts that claims 1 and 8 are in light of the cited art. Accordingly, the Applicant respectfully requests that these rejections be reconsidered and withdrawn. Further, as dependent claims 2 - 7 and 9 - 12 depend from allowable independent claims, it is asserted that these claims are likewise allowable.

New Claim 13

New claim 13 includes all of the limitations of claim 1, but includes the closed ended transition "consisting essentially of". Given the fact that the union connection described by Shaw includes many more elements than are claimed in claim 13, the Applicant respectfully asserts that new claim 13 cannot be anticipated by Shaw. Further, for the same reasons set forth above, there would be no motivation to modify Shaw to obtain the claimed invention.

Conclusion

It is felt that a full and complete response has been made to the Official Action and, as such, places the application in condition for allowance. Such allowance is hereby respectfully

requested. If the Examiner feels, for any reason, that a personal interview will expedite the prosecution of this application, he is invited to phone applicant's attorney.

Respectfully submitted,



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